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| 10/618,641 | 07/15/2003 | Sakashi Ohtaki | Q76301 | 5237 |

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| EXAMINER |
|---|
| GOMA, TAWFIK A |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2653 | |

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/618,641 | OHTAKI ET AL. | |
| | Examiner | Art Unit | |
| | Tawfik Goma | 2653 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-8 and 10-11 are rejected under 35 U.S.C 112 for failure to clearly claim the subject matter in the specification and drawings. It is unclear how the diffraction grating would correct aberration while using the first laser beam if the first laser beam never reaches the hologram pattern as disclosed in claim 1 and figure 11. The examiner assumes that "the first laser beam" in claims 6-7 and 7-10 should have been claimed as "the second laser beam."

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 3-5, 13-14 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US Patent 6407974).**

Regarding claim 1, a pickup device comprising: a first light source adopted to output a first laser beam (32, B1, fig. 2); a second light source adopted to output a

second laser beam having a band of longer wave-length than the first laser beam (34, B2, fig. 2); a rising mirror adopted to reflect the first laser beam and the second laser beam (40, fig. 2); and an objective lens adopted to condense the first laser beam and the second laser beam reflected by the rising mirror onto an information recording medium (36, fig. 2), wherein the rising mirror comprises a first mirror and a second mirror respectively provided on both faces of a transparent substrate (40A, 40B, fig. 3), wherein the first mirror reflects the first laser beam (fig. 3), and transmits the second laser beam (fig. 3), wherein the second mirror reflects the second laser beam (fig. 3), wherein the rising mirror is arranged in a manner that the first mirror faces the objective lens (fig. 2).

Regarding claim 3, Kim further discloses wherein the first light source outputs the first laser beam having a wave-length band of approximately 650 nm, wherein the second light source outputs the second laser beam having a wave-length band of approximately 780 nm (col. 3 lines 65-67 thru col. 4 lines 1-5).

Regarding claim 4, Kim further discloses wherein a center of a luminous flux of the first laser beam incident to the rising mirror is shifted in direction toward the objective lens from a center of a luminous flux of the second laser beam incident to the rising mirror (fig. 3).

Regarding claim 5, wherein the first mirror comprises a dichroic mirror (col. 3 line 58).

Regarding claim 13, Kim further discloses wherein the second mirror comprises an aspherical mirror having an aspherical profile (64b, fig. 8).

Regarding claim 14, Kim further discloses wherein the aspherical mirror is formed into an aspherical profile by which aberration caused by the objective lens is corrected when information is recorded on and played back from the information recording medium (col. 10 lines 28-45).

Regarding claims 16 and 17, Kim's apparatus inherently discloses wherein the objective lens and the rising mirror (fig. 2) are arranged being integrated into one body with a movable section of a biaxial actuator. The optical pick-up apparatus inherently has a tracking actuator, which moves in the radial direction of a disc in order to access information of different tracks. Kim further discloses wherein a tracking direction of the biaxial actuator and a direction of the luminous flux of the first and the second laser beam incident on the rising mirror substantially coincide with each other (col. 4 lines 56-65 and fig. 2).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent 6407974) in view of Otaki (JP 2001-093179).**

Regarding claim 2, Kim discloses everything claimed as applied above (see claim 1). Kim fails to disclose wherein the first light source outputs the first laser beam having a wave-length band of approximately 405 nm, wherein the second light source

outputs the second laser beam having a wave-length band of approximately 650 nm. In the same field of endeavor, Otaki discloses an optical pickup with a dichroic mirror (11, fig. 1) and light sources (LD1, LD2, fig. 1) that output wavelengths of 405 nm and 650 nm respectively (page 2 of Detailed Description, par. 12). The mirror (11) transmits the first light with a 405nm wavelength and reflects the second light with a 650nm light. It would have been obvious to one of ordinary skill in the art to use the dichroic mirror (11) taught by Otaki with the rising mirror (40) taught by Kim. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide a dichroic surface for discriminating a 405nm and a 650nm wavelength in order to make the pickup capable of recording/reproducing high density DVD's as well as standard DVD's (see Otaki page 1 of Detailed Description, pars. 3 and 4)

**Claims 6-7, 9-10 and 12 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kim (US Patent 6407974) in view of Morimoto et al (US Patent 6507549).**

Regarding claim 6, Kim discloses a diffraction grating (46B, fig. 4) for diffracting the second light source B2. Kim further discloses that the diffracting mirror (46) has a dichroic surface (46a) for reflecting the first light beam (B1) and transmitting the second light beam (B2). The second light beam is reflected by a total reflecting mirror (48). Kim fails to disclose wherein the hologram element is on the second surface of the dichroic mirror of the first embodiment (40, fig. 2). In the same field of endeavor Morimoto discloses a mirror with a semitransparent surface (11, fig. 1) and a diffracting second surface (12, fig. 1). It would have been obvious to one of ordinary skill in the

art to modify the pickups taught by Kim in figures 1-5, by providing the diffraction grating on the second surface of the rising mirror as taught by Morimoto. The rationale is as follows: One of ordinary skill in the art would have been motivated to modify the pickups taught by Kim to provide a mirror with the diffraction grating on a back surface as taught by Morimoto in order to decrease the effect on the phase of the scanning beam (see Morimoto, col. 1 lines 63-67)

Regarding claim 7, Kim further discloses wherein the hologram pattern is formed in a pattern having a diffracting function adapted to correct aberration that is caused by the objective lens in the process of recording and playing back the information recording medium by use of the second laser beam (fig. 4 and col. 6 lines 55-67).

Regarding claim 9, Morimoto further discloses wherein the diffraction grating is made of glass (col. 3 lines 67 thru col. 4 line 1). It would have been obvious to make the diffraction grating taught by Kim to be made of glass as glass is a common material used for lenses in optical pickup systems as taught by Morimoto.

Regarding claim 10, Kim further discloses wherein the hologram pattern of the hologram mirror is limited within an opening size appropriate for playing back the information recording medium by use of the second laser beam, and wherein in a region of the hologram mirror except for a region in which the hologram pattern is formed, a hologram pattern is formed in a pattern not contributing to the condensation of the laser beam by the objective lens (fig. 4 and col. 4 lines 56 thru col. 5 lines 1-12).

Regarding claim 12, Kim further discloses wherein the hologram pattern has

a profile of saw-toothed shape (46B, fig. 5).

**Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent 6407974).**

Regarding claim 15, Kim discloses everything claimed as applied above (see claim 13 above). Kim fails to disclose wherein the aspheric surface is made of glass or plastic. Official Notice is taken that it is old and well know in the art to make an aspheric surface out of glass or plastic. It would have been obvious to one of ordinary skill in the art to make the wedge mirror taught by Kim out of glass or plastic. The rationale is as follows: One of ordinary skill in the art would have been motivated to make the wedge mirror out of glass or plastic because glass and plastic have high light reflecting and refracting properties.

**Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent 6407974) in view of Morimoto (US Patent 6507549) and further in view of Otaki (JP 2001-0983179)**

Regarding claims 8 and 11, Kim in view of Morimoto discloses everything claimed as applied above (see claims 7 and 10). Kim in view of Morimoto fail to disclose wherein the hologram pattern is used for recording/playing back a DVD. In the same field of endeavor, Otaki discloses an optical pickup with a dichroic mirror (11, fig. 1) and light sources (LD1, LD2, fig. 1) that output wavelengths DVD wavelengths of 405 nm and 650 nm respectively (page 2 of Detailed Description, par. 12). The mirror (11) transmits the first light with a 405nm wavelength and reflects the second light with a 650nm light. It would have been obvious to one of ordinary skill in the art to use the

dichroic mirror (11) taught by Otaki with the rising mirror (40) taught by Kim (see claim 2 above). Otaki further discloses wherein a hologram element is used to correct aberration that is caused in the process of recording and playing back DVD (page 3 par. 16 and page 4 par. 17). It would have been obvious to one of ordinary skill in the art to provide the diffracting element taught by Otaki to the optical pickup taught by Kim in view of Morimoto. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide a diffracting element for a DVD light source as taught by Otaki to the optical pickup taught by Kim in view of Morimoto in order to properly focus the light sources on the correct level for both HD-DVD and DVD type wavelengths (see Otaki figures 18 and 19).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Goma
2/15/2006

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